APPENDIX A

Constitutional and Statutory Provisions

1. Article I, Section 8, Clause 8, of the Constitution provides:

> The Congress shall have Power . . .
>
> . . . .
>
> To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries. . . .

2. Sections 101, 102 and 103 of the Patent Code of 1952 provide (35 U.S.C. §§ 101-03):

§ 101. Inventions patentable

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

§ 102. Conditions for patentability; novelty and loss of right to patent

> A person shall be entitled to a patent unless—
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

§ 103. Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

APPENDIX B

Opinion of the Court of Appeals

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

No. 17,540

CALMAR, INCORPORATED, *Appellant,*

v.

COOK CHEMICAL COMPANY, *Appellee.*

No. 17,541

COLGATE-PALMOLIVE COMPANY, *Appellant,*

v.

COOK CHEMICAL COMPANY, *Appellee.*

Appeals from the United States District Court
for the Western District of Missouri

[August 21, 1964.]

Before VAN OOSTERHOUT, RIDGE and MEHAFFY, Circuit Judges.

MEHAFFY, Circuit Judge.

Appellants, Calmar, Incorporated, and Colgate-Palmolive Company, brought seperate actions for declaratory judgment against appellee, Cook Chemical Company, seeking a ruling of invalidity and noninfringement of United States Patent No. 2,870,943 filed on March 4, 1957 and issued on January 27, 1959 to inventor Baxter I. Scoggin, Jr. Cook had acquired ownership of the patent and counterclaimed alleging its validity, infringement by both appellants and unfair competition on the part of Colgate. All actions were consolidated for trial, but hearing on the unfair competition charge against Colgate was deferred pending the outcome of the issues of validity and infringe-

ment. Jurisdiction and existence of a justiciable controversy obtain. The District Court in an opinion published in 220 F.Supp. 414 found the patent valid and infringed, and we affirm.

The Scoggin patent in issue will be referred to as Cook-Bakan 2 and the accused device as Calmar SS-40. The undisputed factual background may be briefly recounted. Cook has been in the household insecticide business since 1945. Until 1947 Cook utilized metal sprayers as a dispenser for its product, trademarked "Real Kill", but in that year it first purchased newly developed plastic sprayers from Calmar as a sales promotion gimmick and attached them to the outside of its bottles of insecticide with a separate holder. Successful sales reaction to the idea necessitated its continued practice. Prior to 1956 Cook purchased its sprays from Calmar, but thereafter manufactured its own sprayers through a subsidiary, Bakan Plastics Company. In 1954 Colgate-Palmolive entered the household insecticide field with an aerosol container labeled "Kan Kill". In 1958 Colgate was marketing its "Kan Kill" in liquid, as well as aerosol, form, using a Calmar sprayer attached separate to a glass container, the combination of which resembled Cook's bottle of liquid "Real Kill" with accompanying Bakan sprayer. Marketing of both manufacturers' products with separately attached plastic sprayers posed extra handling and expense problems. The bottler had to affix the cardboard or plastic holder on the neck of the bottle and insert therein the sprayer. More vexatious were the problems of breakage of the flimsily secured sprayer during shipment and pilfering while on the retailer's shelf. With the advance of the pressurized aerosol container, competition became acute due to the convenient shipment and use of the aerated sprayer, which required only that the housewife remove the sprayer cap and depress a button releasing the gasified

insecticide. The liquid insecticide makers were aware of their product's shipping and operation shortcomings, and plagued by the apparent need for a container with an integrated sprayer-pump which could be safely shipped without breakage or leakage. Despite the extensive research and experimentation given the problem by Calmar, Cook and others for a period of some ten years, no solution was forthcoming until conception and commercialization of the Cook-Bakan-2, described by its inventor as a "Pump-Type Liquid Sprayer Having Hold-Down cap".

The sprayer pump, although not the patentable device in suit, has as its upper element, a head containing an orifice, connected with an internal pump through which a dip tube extends to the liquid in the container below. When the sprayer head is depressed, the pump is actuated and causes the liquid in spray form to be emitted.

It was a simple matter to incorporate the sprayer in the container rather than employ the ordinary non-perforated cap with sprayer seperately attached, but such an arrangement did not lend itself to shipping because the sprayer would accidently pump the liquid out in transit. The sprayer head had to be combined and shielded with some type of overcap which maintained the plunger in a depressed position minimizing leakage from the pump of the low viscous insecticide or other similar liquids, while retaining any such leakage within the overcap through a liquid-tight seal until the cap was removed and the product put into use by the consumer.

Scoggin described his answer to these liquid manufacturers' dilemma in the specifications of his patent application as an invention relating to "improvements in structures for dispensing liquids wherein is provided a spray-type hand pump mounted within a container for the liquid through use of the closure cap of such container".

Of the four claims on which the Patent Office granted the patent, we are concerned only with Claims 1 and 2.[1]

The object of the patent is to eliminate the old outside attached sprayer and supplant it with a sprayer enclosed in the container in such a fashion that the sprayer head will be depressed, protected, and sealed in order that the product would lend itself to transportation and handling

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[1] Claim 1. "In a closure assembly for an open-top container having a perforated cap over said open top thereof mounting a spray unit including a barrel provided with a tubular extension passing coaxially upwardly through the perforation in said cap, a plunger reciprocally carried by the barrel and normally extending therebeyond and a spray head on the upper end of the plunger above said extension, the combination with said spray unit of an annular retainer telescoped over and secured to the extension above said cap and provided with external, circumferentially disposed screw threads and an annular, continuous segment at the upper part of the retainer above said screw threads, and a cup-shaped hold-down member housing the head and holding the plunger depressed at substantially the innermost path of travel thereof within the barrel, said member being provided with internal screw threads complementally engaging said screw threads on the retainer and having an internal, circumferentially extending, continuous shoulder disposed to engage said segment around the entire periphery thereof and thereby present a liquid-tight seal located between the spray head and said threads on the retainer and said member respectively, said shoulder being spaced from the lower annular peripheral edge of the member a distance at least slightly less than the distance from the portion of said segment normally engaged by said shoulder, to the proximal upper surface of the cap whereby said lower edge of the member is maintained out of contacting relationship with the cap when the member is on the retainer in a position with said shoulder in tight sealing engagement with the segment."

Claim 2. "A closure assembly as set forth in claim 1 wherein one of the normally interengaged surfaces of the shoulder and segment respectively is substantially conical to present an inclined annular face coaxial with the member and said retainer and of sufficient diameter at the largest end thereof to cause the seal effected between the shoulder and said segment to become tighter as the shoulder slides on said segment during shifting of the member toward the cap."

without breakage or leakage. Claim 1 described a completely integrated device which assertedly accomplished this purpose by the assemblage of corresponding internal threads in the over-cap which screw onto corresponding external threads of the sprayer head's collar with an allowance for a space between the lower edge of the over-cap and the container cap to insure a torqued fit. The over-cap, while holding the sprayer head depressed, also provides for a seal resulting from a raised annular rib around the top of the collar engaging the periphery of three surfaces formed by a downwardly facing shoulder on the underside of the over-cap above the threads. An expert testifying on behalf of appellee described the device's novel contribution to the industry as:

> "The first commercially successful, inexpensive integrated shipping closure pump unit which permitted automated assembly with a container of household insecticide or similar liquids to produce a practical, ready-to-use package which could be shipped without external leakage and which was so organized that the pump unit with its hold-down cap could be itself assembled and sealed and then later assembled and sealed on the container without breaking the first seal."

Validity of the Patent. The statute provides that a patent shall be presumed valid and the burden of establishing invalidity rests on the party asserting it. 35 U.S.C.A. § 282. The issue of patentability of a new combination of old elements to form invention must, however, be approached keeping in mind the more exacting standard long required by the Supreme Court. In *Selmix Dispensers, Inc.* v. *Multiplex Faucet Co., Inc.*, 277 F.2d 884 (8th Cir. 1960), we recognized the Supreme Court's admonition in *Great Atlantic and Pacific Tea Co.* v. *Super-Market Equipment Corp.*, 340 U.S. 147, 152 (1950) that "The conjunction or concert of known elements must contribute something; only when the whole in some way ex-

ceeds the sum of its parts is the accumulation of old devices patentable." See also *Cuno Engineering Corp.* v. *Automatic Devices Corp.*, 314 U.S. 84, 90 (1941); *Lincoln Engineering Co.* v. *Stewart-Warner Corp.*, 303 U.S. 545, 549 (1938); *Caldwell* v. *Kirk Mfg. Co.*, 269 F.2d 506 (8th Cir. 1959), cert. denied 361 U.S. 915 (1959); *Briggs & Stratton Corp.* v. *Clinton Machine Co., Inc.*, 247 F.2d 397 (8th Cir. 1957), cert. denied 355 U.S. 914 (1958).

Factual comparison of the individual elements of the Cook-Bakan 2 sprayer unit with prior art would permit a finding that its components are not novel per se—threaded over-cap depressing sprayer head (Lohse Pat. No. 2,119,884); complementary threaded collar (Lohse Pat. No. 2,119,884; Darley Pat. No. 1,447,712); space tolerance between over-cap and container cap (Slade Pat. No. 2,844,290; Livingston Pat. No. 2,715,480); and shoulder-rib seal at zone beneath sprayer head and above threads (Mellon Pat. No. 2,586,687). However, there is nothing in the prior art suggesting Scoggin's unique combination of these old features in such an assemblage as would solve the production, shipping, and operation problems which for years beset the insecticide industry as well as producers of other low viscous liquids. The patentee's "closure assembly" eliminated the costly and time consuming steps in production requiring attachment of the sprayer holder to the outside of the container and insertion of the sprayer, while at the same time providing a protected, sealed sprayer unit which need only be screwed onto the top of the insecticide container like a metal cap, not to be disturbed until removal of the over-cap and application by the ultimate consumer. This novel "marriage" of the sprayer with the insecticide container which took years in the discovery is neither taught by, nor readily discernible from the application of mechanical skill to the elements of the prior art.

Not only did the device produce new and useful results in the more efficient and economical bottling of low viscous liquids while simultaneously eliminating breakage and leak-

age during its shipment and storage, but it enjoyed immediate commercial success from the public. Cook used on its own products or sold to customers some fifteen million of the Cook-Bakan 2 sprayers receiving not over one hundred complaints which is negligible when dealing with an item packaged by mass production techniques. Evidence of commercial success in a doubtful case may turn the scale in favor of the patentee. *Long* v. *Arkansas Foundry Co.*, 247 F.2d 366, 369 (8th Cir. 1957). Instantaneous industry, as well as public acceptance of the device in issue confirms our belief invention was produced.

In short, the Cook-Bakan 2 meets the exacting standard required for a combination of old elements to rise to the level of patentable invention by fulfilling the long-felt need with an economical, efficient, utilitarian apparatus which achieved novel results and immediate commercial success. Unquestionably, the trial court's finding something new was created worthy of patent protection was proper.

Infringement. After the Cook-Bakan 2 was marketed, some of Calmar's larger customers solicited it to produce a leak-proof, integrated sprayer. At that time Calmar was distributing an uncovered, lock-down bayonet slot type sprayer, the S-25-LP, which proved so unsatisfactory in retaining products of the liquidity of insecticides that one of Calmar's officials discouraged promotion of the item by its sales force. Calmar also experimented with a polyethylene boot, resembling an elongated balloon, which was inserted in the container and covered the lower extremity of the sprayer pump to prevent leakage. Colgate, a customer of Calmar, rejected this innovation and expressed preference for something similar to the Cook-Bakan 2 in appearance which would provide an internally leak-proof sprayer in addition to a shipping enclosure for the sprayer head. Calmar was notified by another customer that it had a Cook-Bakan 2 on test which had proven not to leak. During the fall of 1957 continued pressure from other customers beleaguering Calmar to produce a truly leak-proof

integrated sprayer prompted Calmar's president to employ engineer Douglas F. Corsette in December of 1957, assigning him the special mission of designing such a sprayer which would satisfy customer demands and recapture market initiative.

On September 9, 1958, subsequent to commercialization of the Cook-Bakan 2 in 1957, application was made for a patent on the accused device, Calmar SS-40. Production and distribution of the accused device immediately followed Calmar's grant of United States Patent No. 2,956,509 on October 18, 1960.

The challenged features of the alleged infringing Calmar SS-40, the combination of collar to cap seal with attendant hold-down of the sprayer head, are identical with respect to the sealing zone, principle, and purpose of the Cook-Bakan 2 and differs only in the shape or form of the sealing surfaces at the collar to cap engagement.[2] The trial court correctly described this uncontrolling difference in shape of the seal as the employment of a square shoulder-to-rib type seal on the Cook-Bakan 2 opposed to a tongue-and-groove or "labyrinth" seal on the accused device. The Cook-Bakan 2 provides for three contacting sealing surfaces, whereas the tongue-and-groove shape of the Calmar SS-40 provides for four contacting surfaces. The practical effect of the accused device was to perform substantially the same function in substantially the same manner to obtain the same result as the patent in issue. Exercising our appellate prerogative in a patent case to interpret the exhibits for ourselves, we are constrained to agree with the trial court's statement that "Upon close inspection of the devices, it is difficult to see how they could be much more similar and yet have any different features".

Appellants assert error on the part of the trial court in basing its conclusion of infringement on comparison of the

[2] The accused device also utilized "inner seals" in the pump mechanism uninvolved in this litigation.

devices rather than comparing the accused device with the claims of the patent in suit which they maintain bespeak dissimilarity. The record, however, affords specific evidence of the similarity of the accused device with elements described in Claims 1 and 2 of the Cook-Bakan 2 patent. Testifying at length concerning the elements and patent claims of both devices, a highly qualified expert witness for appellee stated that it was his opinion each and every one of the mechanical elements outlined in Claims 1 and 2 of the Cook-Bakan 2 finds a response in the structure of the accused Calmar SS-40 sprayer unit. The Supreme Court held in *Sanitary Refrigerator Co.* v. *Winters,* 280 U.S. 30 (1929) that generally one device is an infringement of another if it performs substantially the same function in substantially the same way to obtain the same result even though they differ in name, form, or shape. See also *Graver Tank Mfg. Co., Inc.* v. *Linde Air Products Co.,* 339 U.S. 605, 608 (1950); *Priebe & Sons Co.* v. *Hunt,* 188 F.2d 880, 883-84 (8th Cir. 1951), petition for cert. dismissed 342 U.S. 801 (1951). The accused device falls within this definition prohibiting substantial equivalence since its basic machanical elements, mode of operation, and results obtained find an identical counterpart described in the pertinent claims of the Cook-Bakan 2, the two devices varying only with respect to the inconsequential shape of the sealing surfaces.

The finding of infringement in the instant case based on the doctrine of substantial equivalence is a factual determination. *Graver Tank Mfg. Co., Inc.,* v. *Linde Air Products Co., supra* at 609; *Maytag Co.* v. *Murray Corp. of America,* 318 F.2d 79, 83 (6th Cir. 1963). Substantial evidence supports the trial court's finding of infringement.

The judgment of the District Court is in all things affirmed.

APPENDIX C

Judgment of the Court of Appeals

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

September Term, 1963

No. 17,540

CALMAR, INCORPORATED, *Appellant,*

v.

COOK CHEMICAL COMPANY.

Appeal from the United States District Court
for the Western District of Missouri

and

No. 17,541

COLGATE-PALMOLIVE COMPANY, *Appellant,*

v.

COOK CHEMICAL COMPANY.

Appeal from the United States District Court
for the Western District of Missouri

These causes came on to be heard on the record from the United States District Court for the Western District of Missouri, and were argued by counsel.

On Consideration Whereof, It is now here Ordered and Adjudged by this Court that the judgment of the said District Court in these causes (District Court Nos. 12349-3 and 13006-3) be, and the same is hereby affirmed.

August 21, 1964.

APPENDIX D

Order Denying Petition for Rehearing En Banc

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

September Term, 1964

No. 17,540

CALMAR, INCORPORATED, *Appellant,*

v.

COOK CHEMICAL COMPANY.

Appeal from the United States District Court
for the Western District of Missouri

No. 17,541

COLGATE-PALMOLIVE COMPANY, *Appellant,*

v.

COOK CHEMICAL COMPANY.

Appeal from the United States District Court
for the Western District of Missouri

There is before the Court appellants' petition for rehearing en banc and on consideration of such petition, It is the Order of the Court that the petition for rehearing en banc be, and it is hereby, denied.

October 9, 1964.

APPENDIX E

Opinion of the District Court

Filed June 19, 1963

IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF MISSOURI WESTERN DIVISION

No. 12349-3

CALMAR, INCORPORATED, *Plaintiff*

v.

COOK CHEMICAL COMPANY, *Defendant*

No. 13006-3

COLGATE-PALMOLIVE COMPANY, *Plaintiff*

v.

COOK CHEMICAL COMPANY, *Defendant*

Memorandum Opinion, Findings of Fact, and Conclusions of Law

This is a declaratory judgment action instituted by the plaintiff, Calmar, Incorporated, against the defendant Cook Chemical Company, asking this court to declare that U. S. Patent No. 2,870,943 issued to Baxter I. Scoggin, Jr., on January 27, 1959, and presently owned by defendant Cook Chemical Company is invalid and not infringed by plaintiffs.

A similar declaratory judgment action was brought by the plaintiff Colgate-Palmolive Company against defendant Cook Chemical Company asking for the same judicial determination relative to the Scoggin patent.

In its answers, defendant admitted the jurisdiction of this court, and the existence of a justiciable controversy. The defendant also counterclaimed in each action, seeking a declaration of validity of its patent and a finding of infringement by plaintiffs' commercial device.

In the Colgate-Cook case, the defendant's counterclaim also alleged unfair competition as well as infringement on the part of Colgate. The two actions were consolidated for trial on the issues of validity and infringement only. Trial of the unfair competition issue raised in Cook's counterclaim against Colgate was deferred pending a determination of the issues of validity and infringement.

The patent involves a pump spray device designed to be inserted into bottles or other containers for the dispensing of liquid contained therein. The particular device with which we are concerned here, is a screw cap designed to hold down the plunger of said spray pump when it is inserted in a bottle so as to prevent leakage and breakage while being shipped from processor, or while on the shelves of stores where such commodities are offered for sale.

The sprayers which were manufactured by Calmar and later by Bakan, were used by defendant prior to the Scoggin patent, was a simple device made of rigid plastic. It consisted of seven separate elements; (1) a chamber approximately 1¾″ long and ½″ in diameter; (2) a disk was sealed to the top of this element with an opening therein corresponding in size to the opening in the chamber. The lower end of the chamber was formed into a bottle neck design, and the opening at the end thereof was smaller than the opening in the top of the chamber.

Into this opening was inserted (3) a plastic barrel of sufficient length to extend to the bottom of the container. The disk at the top of the chamber was so designed and sized as to enable it to be secured to the inside of the threaded container cap of metal or plastic material. The container cap possessed an opening in the top surface to correspond to the opening in the disk and chamber itself.

(4) A collar smaller than the container cap with an opening therein corresponding in size to the openings in the chamber and disk and the container cap was secured to the

top of the container cap. This collar extended slightly above the container cap.

(5) A small coil spring was inserted into the chamber and rested upon the shoulder created in the sides of the opening near the lower end thereof.

(6) A plunger approximately 2" long was inserted into the chamber through the openings in the collar and the container cap to contact the coil spring therein. Upon the top of this plunger was secured the (7) sprayer head containing an orifice through which the fluid was expelled.

The top of the sprayer head was formed into a "saddle" to accommodate a finger or thumb of the hand. Thus assembled, the sprayer pump was inserted into the bottle and secured thereto by means of the threaded cap. When the plunger was actuated by being pressed downward by the finger or thumb, the fluid in the container was drawn through the barrel and chamber and forced through the orifice in the form of spray. When the sprayer was attached to the container, the plunger and sprayer head projected about 1½" above the top of the container.

Defendant Cook Chemical has been engaged in the manufacture and sale of household insecticides since 1945, and sold its product under the trade name, "Real Kill". Prior to 1954, the insecticide industry largely was made up of a number of small packages scattered throughout the country.

Plaintiff Colgate was in the market prior to 1958 with 6 and 12 ounce Aerosol cans, but did not enter the household insecticide market with a package including pump sprayer until 1958, when it came into the market with "Kan Kill" which immediately came into competition with defendant's product, "Real Kill".

Prior to the patented sprayer coming on the market in 1957, most of the manufacturers and distributors of household insecticide chemicals used the type sprayer which has

heretofore been described, and attached it to their bottles or containers by means of pasteboard or plastic holder. This was necesasry as the products could not be successfully handled with the sprayer in place, due not only to breakage but leakage in shipment and while the bottles were on the shelves of the merchants before sale.

With respect to insecticides, the evidence reveals that the chemicals used by the parties in the manufacture of these products caused the material to be extremely fluid and susceptible to leakage. Due to this, a much tighter seal was required for them than for starch, wave set, leaf polish and moth spray. The container when in shipment or displayed for sale had a separate cap which was removed by the purchaser who then inserted the sprayer.

This practice had also presented problems of breakage and handling to the manufacturers and merchandisers as the sprayers were occasionally damaged or lost. This condition continued to plague the manufacturers of the sprayer and sellers of insecticides particularly, during all of the period prior to the Scoggin invention.

Defendant purchased sprayers for its products from plaintiff and some time prior to 1956, had urged upon Calmar the desirability of making a shipping sprayer that could be put in place before shipment. As early as 1951-'52 Calmar made what has been referred to in the evidence as its SS 25 LP, the head of which, when depressed and turned, would lock into the collar attached to the container cap.

It did not prove to be satisfactory, and did not get far beyond the experimental stage. It leaked down the stem and did not solve the breakage problem. (Deft. Ex. 26). During this period plaintiffs had expended considerable time, effort and money in an attempt to develop a successful shipper-sprayer, but had not met with any substantial success.

In 1956 the defendant organized a company known as "Bakan" and began the manufacture of its own sprayers. Sprayers were not a patented device, and defendant's sprayer did not differ from the Calmar sprayer.

Between the time the defendant began to manufacture its own sprayers in 1956, and March 4, 1957, the patentee, B. I. Scoggin, Jr., devoted his time trying to find a solution to the problem of leakage and breakage. His efforts finally culminated in the patent that is now in dispute. The application therefor was filed on the above date. It was a simple device, but apparently solved the problem of breakage in shipping and leakage.

In his patent Scoggin utilized the Bakan sprayers which were currently being manufactured by it. The only structural change made in the sprayer was to redesign the collar attached to the container cap so as to form the lower portion of the inner seal and to provide threads around the collar to conform to the threads in the hold-down cap. By securing the hold-down cap to the collar the sprayer head was caused to be depressed and covered, and thus shielded from breakage. An inner seal was also formed between the hold-down cap and the collar which prevented leakage.

In his specifications, patentee described his invention as follows:

> "Pump-Type Liquid sprayer having hold-down cap."
>
> "Designation of Patent"
>
> "This invention relates to improvements in structures for dispensing liquids wherein is provided a spray-type hand pump mounted within a container for the liquid through use of the closure cap of such container.
>
> It is common practice, as exemplified for example by Patent No. 2,362,080, issued November 7, 1944, to

dispense various types of liquids such as insecticides, through use of a finger manipulated spray pump normally sold as a component part of the container itself. The pump includes a vertically reciprocable plunger extending upwardly beyond the top of the cap within which the pump is mounted and provided with a spray head or nozzle structure capable of emitting a fine mist-like spray when the plunger is depressed by engagement with a finger receiving saddle forming a part of the spray head.

Difficulties have been experienced in the field by virtue of the inherent nature of such structure since accidental actuation of the plunger causes dispensing of the fluid and oftentimes the material is used in part by store employees prior to sale because of the ready accessibility to the pump itself.

It is the most important object of the present invention, therefore, to provide structure for rendering the pump inoperable during shipment and while in storage, as well as on the shelves of the retail dealer.

Another important object of the present invention is to provide structure capable of carrying out the functions above set forth which is also adapted to enclose the head of the plunger and thereby protect the same, as well as handlers of the merchandise by virtue of the fact that the said plunger is completely enclosed and held at the innermost end of its reciprocable path of travel."

The Patentee claimed for his patent in Claims 1 and 2:

"1. In a closure assembly for an open-top container having a perforated cap over said open top thereof mounting a spray unit including a barrel provided with a tubular extension passing coaxially upwardly through the perforation in said cap, a plunger reciprocably carried by the barrel and normaly extend-

ing therebeyond and a spray head on the upper end of the plunger above said extension, the combination with said spray unit of an annular retainer telescoped over and secured to the extension above said cap and provided with external, circumferentially disposed screw threads and an annular, continuous segment at the upper part of the retainer above said screw threads, and a cup-shaped hold-down member housing the head and holding the plunger depressed at substantially the innermost path of travel thereof within the barrel, said member being provided with internal screw threads complementally engaging said screw threads on the retainer and having an internal, circumferentially extending, continuous shoulder disposed to engage said segment around the entire periphery thereof and thereby present a liquid-tight seal located between the spray head and said threads on the retainer and said member respectively, said shoulder being spaced from the lower annular peripheral edge of the member a distance at least slightly less than the distance from that portion of said segment normally engaged by said shoulder, to the proximal upper surface of the cap whereby said lower edge of the member is maintained out of contacting relationship with the cap when the member is on the retainer in a position with said shoulder in tight sealing engagement with the segment.

2. A closure assembly as set forth in claim 1 wherein one of the normally interengaged surfaces of the shoulder and segment respectively is substantially conical to present an inclined annular face coaxial with the member and said retainer and of sufficient diameter at the largest end thereof to cause the seal effected between the shoulder and said segment to become tighter as the shoulder slides on said segment during shifting the member toward the cap."

The purpose of the Scoggin patent is that of converting the old side-mounted sprayer into a shipper sprayer. In order to achieve this end, two things had to be accomplished. First, the sprayer head and plunger had to be protected from damage. Second, the unit had to be sealed to prevent leakage of the contents. To achieve this the collar on the top of the container cap was modified and the hold-down cap was added.

To the existing collar two new elements were added. First, screw threads were added to the side so that they would engage those on the inside of the hold-down cap. Secondly, a circular rib or lip around the top of the collar was added to establish a seal with a complementary lip inside the hold-down cap.

The hold-down cap included, first, internal screw threads which would engage those added to the side of the collar, and secondly, a circular inner shoulder which would engage the rib or lip added to the top of the collar. Finally, the cap was constructed so that when screwed into place on the collar it would depress the sprayer, completely enclosing it, providing the required protection. A space is provided between the lower surface of the hold-down cap and the container cap so that there is no contact between such surfaces.

The rib on the collar and the shoulder in the cap provide the seal. The threads on the side of the collar and those inside the cap serve to secure the cap to the collar, thus enclosing, depressing and protecting the sprayer. With the cover cap secured to the collar, any forces applied to the cap would be transmitted to the collar and not to the sprayer head and the plunger.

Defendant's patent is limited to the combination of the old sprayer with these modification and additions.

The file wrapper reveals that numerous claims were filed, denied, cancelled and amended before Claims 1 and 2, among others, were finally allowed.

The defendant began to manufacture sprayers embodying its invention in 1956, and at first it encountered some difficulty with leakage at the seal. Some modifications were made in the structure, and the evidence clearly and unequivocally reveals that thereafter the problems, both of leakage and breakage were solved. It immediately enjoyed trade and customer acceptance and its commercial success was assured. The defendant's product with sprayer inside of the container was then for the first time marketed as an integrated unit.

The hold-down cap on defendant's sprayer was screwed to the collar by the assembling machinery at the time of manufacture. This depressed the spray head and established the seal. When the products were bottled the sprayer was inserted and screwed down onto the top of the container. The merchandise was then ready for shipment. In following this procedure the seal formed by the collar and cap were unbroken between the time of final assembly of the sprayer and the first use by the ultimate customer.

Thus Bakan had produced a sealed and protected sprayer unit which the manufacturer need only screw onto the top of its container in much the same fashion as a simple metal cap.

Plaintiff's contention is that defendant's claims lack invention, and that every element of the claims in suit is disclosed in the prior art, and that every combination or subcombination recited in the claims can be found in the prior art. Plaintiffs also deny that either Calmar's patent or the accused device infringes.

§ 103 Title 35 U. S. C. A. provides:

> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

Therefore, the question is—was the combination of the admittedly old and known elements employed by Scoggin in accomplishing the result which he set out to achieve, invention, or was it merely the result of mechanical skill?

At first glance the mere simplicity of the idea would seem to present a very close question, but it must be remembered that we are dealing with a situation that had long given trouble to those who were engaged in that business, and who were familiar with the problem and art.

The manufacturers of sprayers had not been able to solve the problem of leakage and breakage in the shipment of the products with which their spray pumps were used. Numerous ideas had been suggested by Calmar, the experiments were made, but none of them solved the problem. These facts and circumstances certainly must lead us to seriously doubt that it was so simple a mechanical problem as it seems now that it has been solved. However, simplicity and obviousness after the event do not negative invention. *Goodyear Co.*, v. *Ray-O-Vac Co.*, 321 U. S. 275 and cases cited in note 4 p. 279.

Now that it has been solved, one trained in mechanics and in the art might say, "Well, that was a very simple problem and should easily have been solved", but the fact that many people were thinking about and working on it, and were unable to come up with the answer, raises it above the principle of mere simplicity. Hindsight is generally 20-20.

When the application was before the Patent Office, there were five patents cited, including Lohse, June 7, 1938, No.

2,119,884. Plaintiffs have cited two others that were not before the examiner.

Certainly there is nothing new about the use of hold-down caps on bottles. The Lohse patent which employed a hold-down cap, was dated in 1938, but the evidence reveals that it was not commercial at that time, has not been in use for many years. Lohse's cap would not solve the problem that was faced by the manufacturers and sellers of insecticides.

It is true that Lohse's cap contained threads therein which corresponded to threads on a collar above the container cap, just as there are threads on the collar of the sprayer with which we are concerned here. But, the bottom or the skirt of the cap in Lohse forms a seal with a gasket of some substance, apparently leather, which rests on the upper surface of the container cap. There are no seals above the threads and below the sprayer head. This form of contact between the end of the hold-down cap and the top of the container would not solve the problem of leakage.

There is no thought or contention in this case about there being anything novel or new about the hold-down cap or the threads therein corresponding to the threads on the collar. In defendant's teachings and in its claim it is provided that:

> "* * * *said shoulder being spaced from the lower annular peripheral edge of the member a distance at least slightly less than the distance from that portion* of said segment normally engaged by said shoulder, to the proximal upper surface of the cap whereby said *lower edge of the member is maintained out of contacting relationship with the cap when the member is on the retainer in a position with said shoulder in tight sealing engagement with the segment.*" (Emphasis supplied)

Much has been said by the plaintiffs about this language in the claim and they insist that such a space is not invention. In simple language, all that is meant by this rather complicated language is that there is a space between the lower edge of the hold-down cap and the container cap in order to permit the hold-down cap to be screwed down on the collar and form a solid seal between the inner shoulder of the collar and the inner groove of the cap. Certainly without a space so described, there could be no inner seal within the cap, but such a space is not new or novel, but it is necessary to the formation of the seal within the hold-down cap.

To me this language is descriptive of an element of the patent but not a part of the invention. It is too simple, really, to require much discussion. In this device the hold-down cap was intended to perform two functions—to hold down the sprayer head and to form a solid tight seal between the shoulder and the collar below. In assembling the element is necessary to provide this space in order to form the seal.

A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it. 35 U. S. C. A. § 282. The Supreme Court applied this statutory rule in *Mumm* v. *Decker & Sons,* 301 U. S. 168, where it said:

> " 'For the grant of letters patent is *prima facie* evidence that the patentee is the first inventor of the device described in the letters patent and of its novelty. Smith v. Goodyear Dental Vulcanite Co., 93 U.S. 486; Lehnbeuter v. Holthaus, 105 U.S. 94'. The issue of the patent is enough to show, until the contrary appears, that all the conditions under which a discovery is patentable in accordance with the statutes have been met. Hence, the burden of proving want of novelty is upon him who avers it. Walker on Patents, § 116. Not only is the burden to make good this defense upon the party

setting it up, but his burden is a heavy one, as it has been held that 'every reasonable doubt should be resolved against him.' Id., Cantrell v. Wallick, supra; Coffin v.: Ogden, 18 Wall 120, 124; Barbed Wire Patent, 143 U.S. 275, 284, 285; Adamson v. Gilliland, 242 U.S. 350, 353." (171)

In *Ezee Stone Cutter Mfg. Co.*, v. *Southwest Indus. Prod.*, 262 F. 2d 183 (C.A. 8, 1958), our own Eighth Circuit Court of Appeals quoted *Long* v. *Arkansas Foundry Co.*, 247 F. 2d 366, 369, (C.A. 8, 1957):

" 'The issuance of a patent is prima facie evidence of both novelty and utility (see 35 U.S.C.A .§ 282), and when one attacks a patent he must make good his attack with reasonable clearness. He has the burden of proof, and every reasonable doubt will be resolved against him. Doner v. Sheer Pharmacal Corporation, 8 Cir., 1933, 64 F. 2d 217, 221, and cases cited; G. H. Packwood Mfg. Co. v. St. Louis Janitor Supply Co., 8 Cir., 1941, 115 F. 2d 958, 964, 965.

In a case where the patentability of a claimed invention is in issue, evidence of commercial success is admissible and may be forthcoming. In a doubtful case, such evidence may turn the scale in favor of the plaintiff. See Donner v. Sheer Pharmacal Corporation, supra, at page 221 of 64 F. 2d, and cases cited.

In such a case, evidence that the patent device or combination solved a long-felt want and an old problem which had baffled those skilled in the art is also admissible. [Citing cases]' "

As heretofore stated, defendant's patented device met with substantial and extensive commercial success. This is evidenced by the fact that Calmar almost immediately set out to produce an equally successful shipper-sprayer. Commercial success or acceptance is an element that may

be taken into consideration in determining the question of invention, but is not necessarily determinative of the issue. *Temco Elec. Motor Co.*, v. *Apeco Mfg. Co.*, 275 U.S. 319; *Forestek Plating & Mfg. C.*, v. *Knapp-Monarch Co.*, 106 F. 2d 554 (C.A. 6, 1939); *Ezee Stone Cutter Mfg. Co.*, v. *Southwest Indus. Prod. supra.*

Another question for determination here is whether or not defendant's invention solved the problem of leakage or breakage in shipment. Unquestionably it did. That is best exemplified by the fact that the plaintiffs adopted and used a device with a seal within the cap almost exactly like that used by the defendant. Thus it meets one of the requirements necessary to an invention, it was useful.

Was it new? The fact that a patent may be composed of old and well known elements, if it performs a new and useful purpose does not destroy invention. *Parks* v. *Booth*, 102 U.S. 96; *Loom Co.* v. *Higgins*, 105 U.S. 580. As a matter of fact, most of the mechanical patents that come to our attention now are a combination of old and well known elements into new form or composition.

Although hold-down caps had been used for many years, their use on the sprayer was for a special and limited purpose. It was employed in a narrow art, one pertaining primarily to the sealing, shipping and use of insecticides by means of liquifying sprayers.

Several years of study and experimentations had been spent in an attempt to solve this problem; designs had been submitted to the manufacturers and sellers of insecticides. None had been satisfactory. May it not then be said that the design of a sealing element or joint that solved the problem, although it was simple, would be new? Certainly it was new in the art which the problem presented.

By the same reasoning, may it not also be said that if it solved a long-sought need, it was likewise novel? If it meets the requirements of being new, novel and useful, it

was the subject of invention, although it may have been a short step, nevertheless it was the last step that ended the journey. The last step is the one that wins and he who takes it when others could not, is entitled to patent protection. *The Barbed Wire Patent,* 143 U.S. 275.

It is my conclusion that the defendant's patent is valid.

Following the introduction into the market of its Bakan 2 sprayer pump, the pressure upon Calmar from its customers to produce a better shipper pump than it had theretofore been able to supply, became acute. Calmar's president testified that either he or some member of his organization had seen the Bakan 2 sprayer when it came upon the market in the fall of 1957.

In the early part of 1958, Calmar employed Douglas F. Corsette, who, at the time he testified in this case, was vice-president in charge of engineering and development for Calmar. He had Bachelor and Masters degrees in engineering from Purdue University. Immediately prior to the time he was employed by Calmar, he had been in the employ of a company engaged in the construction of an automatic assembly machine for sprayer devices.

In the early part of 1958, he was given the special assignment of designing a sprayer that would meet Calmar's customer requirements. These requirements apparently specified something comparable to that which had been produced by Bakan.

As a result of their study and experiments, Douglas F. Corsette and Rex C. Cooprider produced the accused device and filed an application for a patent on September 9, 1958, which was granted October 18, 1960. While the validity of the Corsette-Cooprider patent is not in issue here, I think for the purpose of understanding plaintiffs' commercial device, it may be well to describe it.

The patent was assigned by Corsette and Cooprider to the Drackett Company of Cincinnati, Ohio. The Drackett

Company acquired Calmar, Inc., and Calmar Company was thereafter organized as the sales agency for Drackett Company. The question of the identity and relationship of the respective companies was settled before trial by stipulation of the parties.

The application is entitled, "Fluid Dispensing Pumps" and it stated:

> "This invention relates to new and improved fluid dispensing pumps of the class in which the pump plunger is immobilized in a predetermined position for packing and shipping purposes to avoid inadvertent actuation and discharge of the liquid contents of a container to which such a pump may be applied.
>
> In liquid dispensing pumps adapted for application to and sale with containers for various commercially dispensed liquids, it has been heretofore known, as exemplified by the Lohse U. S. Patent 2,119,884, to utilize a protective cover for immobilizing the pump plunger in a predetermined depressed condition and also for trapping and retaining any liquid that may be inadvertently discharged from the pump. * * * * * It has been found, however, that in practice a very appreciable amount of liquid may be discharged into such a protective cap due to inversion of the container and/or expansion of its contents. In such case, the liquid may escape either through the usual liquid discharge passage of the plunger and the plunger head, or between the plunger and the barrel in which it works.
>
> (* * * * * this is the same patent which was referred to in Scoggin).
>
> It is, accordingly, a primary object of the present invention to provide an improved form of fluid dispensing pump having means for retaining the plunger in immobilized position and including additional means rendered operative by immobilization of the plunger

for closing off the plunger discharge passage and at the same time providing a fluid seal or block preventing egress of the liquid between the pump plunger and its associated barrel.

The preferred means for retaining the plunger thus immobilized is a protective hold-down cap which is threaded or otherwise secured to the container over the plunger head to depress the plunger to its immobilized position against spring pressure.

The invention further contemplates that the discharge opening or orifice of the plunger head will be surrounded by a frusto-conical sealing surface for cooperation with a similar frusto-conical interior surface of the protective cap whereby to prevent discharge of fluid from the plunger head into the cap incident to application of the cap and depression of the plunger to its immobilized position, as well as subsequent thereto."

(This designated frusto-conical sealing surface or cap is the same cap that is referred to in Calmar's SS 25 and 40).

The description of plaintiff's patented device is quite lengthy and requires 5½ pages of soft copy.

Calmar's specifications then proceeded to describe the sprayer pump and certain improvements made thereto for the purpose of preventing the fluid from escaping into the cap when the plunger or head of the sprayer head is depressed. With that particular description I am not concerned, because it is not that element of plaintiffs' commercial device which is alleged infringed. The description of this element of plaintiffs' patented device is designated as a "Primary Seal", whereas that portion of plaintiffs' device with which we are concerned, is contained within the hold-down cap and collar.

There is also fully described in plaintiffs' specifications what we have been referring to as the seal between the threads on the collar attached to the container cap and the top of the hold-down cap. The specifications are spelled out in great detail. Significant of this language, I quote the following:

> "In order to effect a liquid tight sealing engagement between the cap and the collar, the collar is formed with an upwardly presented groove inwardly of its threaded outer wall for reception of a depending annular sealing ring on the cap. The dimensions of the groove and sealing ring are so related that the sealing ring preferably makes a jamming fit into the groove.
>
> It is preferred that the cap be of resilient material in order that its conical interior sealing surface may form a fluid tight sealing engagement with the conical peripheral surface of the spray head and also so that its sealing ring may form a yielding fluid tight fit within the groove. Where the cap is thus formed of resilient plastic, however, it is subject to the usual and known difficulty that excessive tightening of the cap, as by automatic capping mechanism, may tend to expand the lower edge of the cap skirt so that the threads of the cap will override and become disengaged from the threads on the collar. However, the depending ring or skirt in addition to performing its sealing function, will resist such expansion tendency and thus adapt the resilient material caps for efficient application by automatic capping mechanism."

There are twenty claims in Calmar's invention. Its Claim 11 is particularly significant:

> "In a fluid dispensing pump, the combination with a generally vertical cylindrical pump barrel having at its upper end a collar having threads thereon, of a plunger reciprocally disposed in said barrel and having

at its upper end and above said collar a discharge head having a discharge orifice for fluid, spring means acting between said barrel and plunger for urging said plunger upwardly in said barrel, a check valve associated with said barrel to prevent downward movement of fluid therein, said plunger being forced to provide a discharge passage extending therethrough and communicating with said discharge orifice, a protective cap dimensioned to embrace said discharge head, said cap having a skirt for engagement with the threads on said collar to hold said plunger in a depressed and immobilized position against the action of said spring means, coacting sealing surfaces on said plunger and collar, said sealing surfaces being engaged when said cap is threaded on said collar to seal said barrel to prevent leakage externally of said plunger, means operable when said plunger is depressed and immobilized to seal said discharge passage to prevent leakage internally of said plunger, said last named means comprising a sealing ring surrounding said discharge orifice and having a contour conforming with the contour of the interior surface of said cap and positioned for sealing engagement with said cap in the depressed and immobilized position of said plunger, and coacting sealing surfaces on said cap and collar to contain within said cap liquid escaping from a defective seal either externally or internally of said plunger."

Stripped of the technical language, if I correctly understand the teaching of the Calmar patent, it simply means it has made some improvements in its old basic sprayer by providing seals within the structure of the sprayer thus preventing the escape of fluid when it is in a depressed position.

The accused device is the Calmar SS-40. It conforms in almost all respects to the Corsette-Cooprider patent. As I have said, it contains modifications of the basic sprayer

in addition to the hold-down cap and collar elements which are alleged to infringe defendant's patent. These modifications are not in issue here, and it is only the problem solving combination of the collar to cap seal and the hold-down cap that is alleged to infringe.

Specifically, the Calmar seal is formed by a circumferential groove in the top of the collar secured to the container cap and a tongue or projection formed in the hold-down cap to conform to the groove in the collar, so that when the hold-down cap is screwed down on the collar, the upper tongue is pressed into the lower groove, thus forming a seal. This, in plaintiffs' evidence, is designated a "secondary" seal; also as a "labyrinth" seal, and differs from Scoggin's, which described a square shoulder which comes in contact with the projection or tongue circumferentially formed around the collar.

In the Scoggin patent it may be said that there are three contacting surfaces formed by a union of the above shoulder and the below projecting tongue, whereas in the plaintiffs' accused device, there seems to be four contacting surfaces that are comparable to ordinary tongue-and-groove hardwood flooring.

We may assume, as an ordinary principle of mechanics, that if tongue and grooved objects are precisely scaled, when they are put together, they will form a perfectly tight union; the tongue and groove conforming exactly to each other's dimensions and the outer portions of the groove being perfectly dimensioned to the outer edges or portions of the tongue will likewise form a perfect union, and all coming in contact without any space in any area.

That is not true, I believe with either defendant's patent or plaintiffs' accused device. This may be attributed to manufacturing imperfections and to the type of material used, as it is pliable and subject to distortion under pressure.

This characteristic of the material is, to a great degree, responsible for the establishment of the seal.

So far as outward appearances are concerned, plaintiffs' accused device and defendant's patented device are identical, and it is necessary to make a close inspection of the inner portions of the hold-down caps to determine the precise form of the seals.

Structurally, the only significant difference between the collars and hold-down caps of defendant's patent and plaintiffs' accused device is the provision for the shoulder and tongue on defendant's, and the labyrinth on plaintiffs.

Infringement is a question of fact. *Stilz* v. *U.S.*, 269 U.S. 144, *Graver Tank and Mfg. Co. et al,* v. *Linde Air Products Co.*, 339 U.S. 605. The burden of proof is on the party alleging infringement. *Cammeyer* v. *Newton*, 94 U.S. 225, *Bene* v. *Jeantet*, 129 U.S. 683. The test of infringement was set out by the Supreme Court in *Sanitary Refrigeration Co.* v. *Winters*, 280 U.S. 30, at 41-42 where it said:

> "There is substantial identity constituting infringement, where a device is a copy of the thing described by the patentee 'either without variation, or with such variations as are consistent with its being the same thing' *Burr* v. *Duryee*, 1 Wall 531, 537. * * * * * Generally speaking, one device is an infringement of another 'if it performs substantially the same function in substantially the same way to obtain the same result.' . . . Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way and accomplish substantially the same result, they are the same even though they differ in name, form or shape.' "

Plaintiffs' commercial device, insofar as the sealing in the hold-down cap and the protection of the sprayer head

are concerned, perform the same function in substantially the same manner performed by defendant's.

Upon a close inspection of the devices, it is difficult to see how they could be much more similar and yet have any different features.

IT IS THEREFORE my conclusion that plaintiffs' commercial device infringes Claims 1 and 2 of defendant's patent.

R. M. DUNCAN
Richard M. Duncan
Judge

Dated: June 19, 1963